

### REMARKS

Applicants respectfully request further consideration of this application, and further consideration of the Office Action dated November 17, 2005. Upon entry of this Amendment, claims 4-7, 13, 16, 17, 20, 25, 26, 29, 30 and 34-37 will remain pending in this application. Claim 16 has been amended further to incorporate subject matter from the specification. Claim 16 is supported by the specification and the original claims. Claim 25 has been amended to correct its dependency to be from claim 16 rather than canceled claim 2. No new matter is incorporated by this Amendment.

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With regard to the November 17, 2005 Action, reference first is made to numbered item 6 on page 9. This item indicates that the rejection of claims 1, 2 and 4 "in view of Mauk" has been withdrawn. Claims 1 and 2 of course were cancelled by Applicants' Amendment of September 2, 2005. Claim 4 remains but now depends from claim 16. As such, item 6 of the Action will be interpreted to mean that Mauk alone can not support a rejection of claim 16. Item 2 of the November 17, 2005 Action still refers to certain asserted art "as applied to claims 1, 2 and 4 above." For instance, see the last two lines in the first paragraph of item 2. For now, this simply will be considered as a mere error resulting from copying of the stated rejections from the previous (July 5, 2005) Office Action.

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Claims 4-7, 16, 17, 20, 25, 26, 29, 30, and 39 have been rejected under 35 U.S.C. § 103(a) as purportedly obvious based on Usui et al. (Thick GaN Epitaxial ...) or Zheleva (Dislocation density reduction...) in view of Tischler et al. (U.S. Pat. No. 5,679,152) and Mauk (U.S. Pat. No. 5,828,088). Claim 13 is rejected under 35 U.S.C. § 103(a) as purportedly obvious based on Usui et al. or Zheleva in view of Shakuda, and further in view of Tadamoto (U.S. Pat. No. 5,770,887). Claims 34 and 36 are rejected under 35 U.S.C. § 103(a) as purportedly obvious based on Usui et al. or Zheleva in view of Shakuda and further in view of IBM (Abstract). Claims 35 and 37 are

rejected under 35 U.S.C. § 103(a) as purportedly obvious based on Usui et al. or Zheleva in view of Shakuda, and in view of IBM, and further in view of Inoue (U.S. Pat. No. 5,182,233).

Applicants respectfully traverse all of these rejections together.

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Claim 16 has been amended further to ensure patentable distinction over all of the documents asserted in connection with the rejections summarized immediately above. Specifically, claim 16 has been amended to recite details of the “epitaxial layer growing step” wherein the “upper epitaxial layer” is generated. To this end, claim 16 describes that the step of growing the “upper epitaxial layer” includes “initially growing a hexagonal pyramid shaped crystal in each of said opening windows whereafter each crystal connects with other crystals on said mask layer without interstices therebetween.” This upper epitaxial layer growing step comes directly from Applicants’ specification. See page 30, beginning at the paragraph bridging pages 30 and 31, and continuing through page 31. This portion of the specification refers to Figs. 10A and 10B. In Fig. 10A, the initial growing stage of the second epitaxial layer 34 is shown with GaN crystal grains 36 appearing in each window opening 30. According to the top of page 31, each crystal grain 36 has “a regular hexagonal pyramid or truncated regular hexagonal pyramid” shape. As page 31 goes on, the crystal grains 36 develop and exhibit lateral growth whereupon they eventually will connect with each other “without forming any interstices (pits) therebetween.”

Applicants courteously urge that none of the patents applied in the above-listed rejections teaches or suggests their method as now described in claim 16. It is submitted that none of the asserted prior art documents discloses Applicants’ upper epitaxial growing step of initially growing hexagonal pyramid shaped crystals in the mask windows and allowing these pyramids to grow together without interstices. At least in part, the applied patents fail to teach or suggest

growing such step because (as set forth in Applicants' Amendment of September 2, 2005) none of such patents discloses Applicants' particular arrangements of windows, where windows in a column are spaced according to a first pitch,  $L$ , and the columns themselves are separated by a second pitch,  $d$ , that is no less than  $0.75L$  and no greater than  $1.3L$  in the  $\langle 1-210 \rangle$  direction. For at least these reasons, Applicants courteously urge that all of the rejections fall together in failing to render the remaining claims obvious. For at least these reasons, Applicants courteously solicit withdraw of all of the above-listed rejections.

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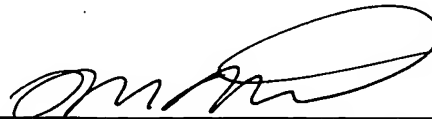
Applicants respectfully submit that this Amendment and the above remarks obviate the outstanding issues in this case, thereby placing the application in condition for immediate allowance. Allowance of this application is earnestly solicited.

If any fees under 37 C.F.R. §§ 1.16 or 1.17 are due in connection with this filing, please charge the fees to Deposit Account No. 02-4300; Order No. 033035.0341.

If an extension of time under 37 C.F.R. §1.136 is necessary that is not accounted for herewith, such an extension is requested. The extension fee should be charged to Deposit Account No. 02-4300; Order No. 033035.0341.

Respectfully submitted,  
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